



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

**MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION**

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Firestone Building Products Company, LLC
250 East 96th Street
Indianapolis, IN 46240-3702

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Firestone Modified Bitumen Roof Systems over Steel Decks.

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA No.10-1230.03 and consists of pages 1 through 79.

The submitted documentation was reviewed by Jorge L. Acebo.



NOA No.: 11-0119.10
Expiration Date: 03/08/16
Approval Date: 04/25/13
Page 1 of 79

ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Modified Bitumen
Material: APP/SBS
Deck Type: Steel
Maximum Design Pressure: -172.5 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

| Product | Dimensions | Test Specification | Product Description |
|----------------------|----------------|--------------------|-------------------------------------------------------------------------------------------------------------------------|
| APP 80 Glass Base | 39.4" x 65'4" | ASTM D6509 | Fiberglass reinforced modified bitumen, smooth surfaced base sheet. |
| SBS Glass Torch Base | 39.4" x 33'10" | ASTM D6163 | Modified bitumen base sheet with a burn-off film and reinforced with non-woven fiberglass mat. |
| SBS Base | 39.4" x 50' | ASTM D6163 | Fiberglass reinforced SBS base sheet. Applied in hot asphalt or mechanically attached. |
| SBS Premium Base | 39.6" x 50' | ASTM D6163 | Fiberglass reinforced SBS base sheet. Applied in hot asphalt or Multi-Purpose MB Cold Adhesive. |
| SBS PolyBase | 39.6" x 50' | ASTM D6164 | A smooth surfaced, non-woven polyester reinforced, modified bitumen base sheet |
| SBS Poly Torch Base | 45" x 39" | ASTM D6164 | Fiberglass reinforced modified bitumen membrane, SBS rubber modified asphalt reinforced with a non-woven polyester mat. |
| Ply IV | 33" x 180" | ASTM D2178 | Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt. |
| Ply VI | 33" x 180" | ASTM D2178 | Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt. |
| Ply IV (4) M | 39.4" x 164.5' | ASTM D2178 | Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt. |
| Ply VI (6) M | 39.4" x 164.5' | ASTM D2178 | Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt. |
| MB Base | 36" x 108' | ASTM D4601 | Fiberglass reinforced base sheet, asphalt coated on both sides. Applied in hot asphalt or mechanically attached. |



| Product | Dimensions | Test Specification | Product Description |
|-------------------------|-------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------|
| MB Base M | 39.4" x 98.7" | ASTM D4601 | Fiberglass reinforced base sheet, asphalt coated on both sides. Applied in hot asphalt or mechanically attached. |
| SBS Smooth | 39.4" x 33'10" | ASTM D6164 | Smooth surfaced, modified bitumen membrane reinforced with non-woven polyester mat. Applied in hot asphalt. |
| APP 160-P | 39.4" x 32'9" | ASTM D6222 | Polyester reinforced modified bitumen, smooth surfaced membrane. Torch applied for use as a base or ply sheet only. |
| APP 170 Cool | 39.6" x 33'6" | ASTM D6222 | Polyester reinforced modified bitumen, smooth surfaced membrane. |
| APP 180 | 39.4" x 32'10" | ASTM D6222 | Polyester reinforced modified bitumen, granule surfaced membrane. Torch applied. |
| APP 180-P | 39.4" x 32'9" | ASTM D6222 | Polyester reinforced modified bitumen, granule surfaced membrane. Torch applied. |
| APP 180 UltraWhite | 39.4" x 32'10" | ASTM D6222 | Polyester reinforced modified bitumen, UltraWhite granule surfaced membrane. Torch applied. |
| APP 180 FR | 39.4" x 32'10" | ASTM D6222 | Polyester reinforced, fire retardant modified bitumen, granule surfaced membrane. Torch applied. |
| APP 180 FR UltraWhite | 39.4" x 32'10" | ASTM D6222 | Polyester reinforced, fire retardant modified bitumen, UltraWhite granule surfaced membrane. Torch applied. |
| APP 180 Cool | 39.4" x 32'10" | ASTM D6222 | Polyester reinforced modified bitumen, granule surfaced membrane. |
| APP 180 FR Cool | 39.4" x 32'10" | ASTM D6222 | Polyester reinforced, fire retardant modified bitumen, granule surfaced membrane. Torch applied. |
| SBS Glass | 39.4" x 33'10" | ASTM D6163 | Fiberglass reinforced, granule surfaced, modified bitumen membrane. Applied in hot asphalt. |
| SBS Glass FR | | ASTM D6163 | Fiberglass reinforced, fire rated, granule surfaced, modified bitumen membrane. Applied in hot asphalt. |
| SBS Glass FR UltraWhite | | ASTM D6163 | UltraWhite fiberglass reinforced, fire rated, granule surfaced, modified bitumen membrane. Applied in hot asphalt. |

| Product | Dimensions | Test Specification | Product Description |
|-------------------------------|-------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| SBS Glass FR Torch | | ASTM D6163 | Fiberglass reinforced, fire rated, granule surfaced, modified bitumen membrane. with burn off film and fiberglass enhanced |
| SBS Glass FR Torch UltraWhite | | ASTM D6163 | UltraWhite fiberglass reinforced, fire rated, granule surfaced, modified bitumen membrane. with burn off film and fiberglass enhanced |
| SBS Torch | 48" x 39" | ASTM D6164 | Granule surfaced, SBS cap reinforced with a non-woven polyester mat, with burn off film and fiberglass enhanced |
| SBS Torch UltraWhite | 48" x 39" | ASTM D6164 | UltraWhite granule surfaced, SBS cap reinforced with a non-woven polyester mat, with burn off film and fiberglass enhanced |
| SBS FR Torch | 48" x 39" | ASTM D6164 | Granule surfaced, fire rated, SBS cap reinforced with a non-woven polyester mat, with burn off film and fiberglass enhanced |
| SBS FR Torch UltraWhite | 48" x 39" | ASTM D6164 | UltraWhite granule surfaced, fire rated, SBS cap reinforced with a non-woven polyester mat, with burn off film and fiberglass enhanced |
| SBS Cap | 39.4" x 33'10" | ASTM D6164 | Granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat. |
| SBS Cap UltraWhite | 39.4" x 33'10" | ASTM D6164 | UltraWhite granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat. |
| SBS FR Cap | 39.4" x 33'10" | ASTM D6164 | Granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat. |
| SBS FR Cap UltraWhite | 39.4" x 33'10" | ASTM D6164 | UltraWhite granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat. |
| SBS Premium | 39.4" x 33'10" | ASTM D6164 | Granule surfaced, modified bitumen membrane reinforced with polyester mat. Applied in hot asphalt. |
| SBS Premium FR | 39.4" x 33'10" | ASTM D6164 | Granule surfaced, fire rated, modified bitumen membrane reinforced with non-woven polyester mat. |

| Product | Dimensions | Test Specification | Product Description |
|--------------------------------------|------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| SBS Premium FR UltraWhite | 39.4" x 33'10" | ASTM D6164 | UltraWhite granule surfaced, fire rated, modified bitumen membrane reinforced with non-woven polyester mat. |
| SBS Premium Torch | 39.4" x 33'10" | ASTM D6164 | Granule surfaced, modified bitumen membrane with a burn-off film and reinforced with non-woven polyester mat. |
| SBS Premium Torch UltraWhite | 39.4" x 33'10" | ASTM D6164 | UltraWhite granule surfaced, modified bitumen membrane with a burn-off film and reinforced with non-woven polyester mat. |
| SBS Premium FR Torch | 39.4" x 33'10" | ASTM D6164 | Granule surfaced, fire rated, modified bitumen membrane with a burn-off film and reinforced with non-woven polyester mat. |
| SBS Premium FR Torch UltraWhite | 39.4" x 33'10" | ASTM D6164 | UltraWhite granule surfaced, fire rated, modified bitumen membrane with a burn-off film and reinforced with non-woven polyester mat. |
| I.S.O. Twin Pack Insulation Adhesive | Dual 750 ml cartridges | Proprietary | A two-component polyurethane insulation adhesive. |
| I.S.O. FIX II | 30 lb. | Proprietary | A single component polyurethane insulation adhesive. |
| I.S.O. Stick | 5 gal. | Proprietary | A two-component polyurethane insulation adhesive. |
| Multi-Purpose MB Cold Adhesive | 55 gal. | Proprietary | An asphalt based adhesive. |
| LiquiGard Membrane Adhesive | 6 gal. | Proprietary | A two-component, solvent-free, asphalt-based urethane adhesive. |

APPROVED INSULATIONS:**TABLE 2**

| Product Name | Product Description | Manufacturer (With Current NOA) |
|-------------------------------------|---------------------------------------------------|---------------------------------------------|
| ACFoam-II | Isocyanurate Insulation | Atlas Roofing Corp. |
| ISO 95+ GL, RESISTA | Isocyanurate Insulation | Firestone Building Products Company, LLC |
| DensDeck, DensDeck Prime | Silicon treated gypsum | Georgia-Pacific Gypsum LLC |
| ENRGY 3, ENRGY 3 25 PSI | Isocyanurate Insulation | Johns Manville Corp. |
| Fesco Foam | Expanded mineral fiber insulation | Johns Manville Corp. |
| High Density Wood Fiberboard | High Density Wood Fiberboard insulation board. | Generic |
| Perlite Insulation Board | Perlite Insulation | Generic |
| Multi-Max-3, Multi-Max FA-3 | Isocyanurate Insulation | Rmax Operating, LLC |
| SECUROCK Gypsum-Fiber Roof Board | Gypsum Board | United States Gypsum Corporation |
| ISOGARD HD | Polyisocyanurate foam insulation. | Firestone Building Products Company, LLC |
| FiberTop E | Regular wood fiber insulation | Firestone Building Products Company, LLC |

APPROVED FASTENERS:

TABLE 3

| Fastener Number | Product Name | Product Description | Dimensions | Manufacturer (With Current NOA) |
|------------------------|-------------------------------------|---------------------------------------------------------------|-------------------|------------------------------------------|
| 1. | Firestone All-Purpose | Insulation and membrane fastener | Various | Firestone Building Products Company, LLC |
| 2. | Firestone Heavy-Duty | Insulation and membrane fastener | Various | Firestone Building Products Company, LLC |
| 3. | MB 2" Barbed Metal Seam Plate | Metal plates used for membrane securement. | 2" dia | Firestone Building Products Company, LLC |
| 4. | Firestone 2-3/8 Barbed Seam Plate | Membrane seam attachment plate. | 2-3/8" dia | Firestone Building Products Company, LLC |
| 5. | 2" Metal Plate | Membrane attachment plate. | 2" dia | Firestone Building Products Company, LLC |
| 6. | #14 & #15 HS Dekfast Fasteners | Insulation and membrane fastener | Various | SFS Intec, Inc. |
| 7. | Dekfast Galvalume Steel Hex Plate | Insulation and membrane fastener | Various | SFS Intec, Inc. |
| 8. | #12 & #14 Roofgrip | Insulation and membrane fastener | Various | OMG, Inc. |
| 9. | 3" Round Metal Plate | Galvalume AZ50 stress plate | 3" round | OMG, Inc. |
| 10. | OMG Fasteners | Insulation and membrane fastener | Various | OMG, Inc. |
| 11. | OMG 3 in. Round Metal Plates | Galvalume AZ55 stress plate | 3" round | OMG, Inc. |
| 12. | OMG Plastic Plate | Plastic plates for fasteners. | 3" round | OMG, Inc. |
| 13. | Trufast Fasteners | Insulation and membrane fastener | Various | Firestone Building Products Company, LLC |
| 14. | Trufast #14 HD Fastener | Insulation and membrane fastener | Various | Altenloh, Brinck & Co. U.S., Inc. |
| 15. | Trufast 3" Metal Insulation Plate | Galvalume AZ50 steel plate | 3.23" round | Altenloh, Brinck & Co. U.S., Inc. |
| 16. | Firestone Metal Batten Bar | Membrane attachment batten bar | 10' x 1" | Firestone Building Products Company, LLC |
| 17. | Insulation Fastening Plate | Insulation plate for use with Firestone Fasteners | 3" round | Firestone Building Products Company, LLC |
| 18. | OMG Heavy Duty Fasteners | Insulation and membrane fastener | Various | OMG, Inc. |
| 19. | Firestone Coiled Metal Batten Strip | Galvalume AZ 55 batten bar | 220' x 1" | Firestone Building Products Company, LLC |
| 20. | Recessed Metal Plate | Galvalume AZ50 stress plate | 3" square | OMG, Inc. |
| 21. | Firestone Heavy-Duty Plus | High thread fastener for use in wood, steel or concrete decks | Various | Firestone Building Products Company, LLC |
| 22. | Dekfast Galvalume Steel 3 in. Round | Galvalume AZ50 stress plate | 3" round | SFS Intec, Inc. |

EVIDENCE SUBMITTED:

| <u>Test Agency</u> | <u>Test Identifier</u> | <u>Description</u> | <u>Date</u> |
|-------------------------------------------------|------------------------|--------------------------|-------------|
| Factory Mutual Research Corp. | 1D5A8.AM | FM 4470 | 09/09/98 |
| | 3003597 | FM 4470 | 07/14/99 |
| | 3004786 | FM 4470 | 05/16/00 |
| | 3005030 | FM 4470 | 08/08/00 |
| | 3009613 | FM 4470 | 08/26/02 |
| | 3017121 | FM 4470 | 06/12/03 |
| | 3022502 | FM 4470 | 01/29/07 |
| | 3030227 | FM 4470 | 06/18/07 |
| | 3007328 | FM 4470 | 07/12/02 |
| | 3030107 | FM 4470 | 05/18/07 |
| | 3026520 | FM 4470 | 12/14/06 |
| | 3032850 | FM 4470 | 06/05/08 |
| | 3035017 | FM 4470 | 08/04/10 |
| | 3040795 | FM 4470 | 03/24/11 |
| | 3033921 | FM 4470 | 08/04/10 |
| | 3033218 | FM 4470 | 08/04/10 |
| | 3041534 | FM 4470 | 03/09/11 |
| | 3042392 | FM 4470 | 06/08/11 |
| | 3035560 | FM 4470 | 01/11/10 |
| | 3038191 | FM 4470 | 08/04/11 |
| | 3040306 | FM 4470 | 09/07/11 |
| Trinity ERD | 4810.01.96-1 | PA 114(C) & PA 114(D) | 01/31/96 |
| | F8800.01.08-R1 | TAS 114 | 04/21/08 |
| | 4810.10.96-1-R1 | PA 114(J) | 03/09/09 |
| | F10370.05.08 | ASTM C 1289 | 05/08/08 |
| | F10500.10.08-1R2 | ASTM D6163 | 03/22/13 |
| | F31960.05.10-1 | ASTM D4977 | 05/19/10 |
| | F31960.05.10-2 | ASTM D4977 | 05/19/10 |
| | F31960.08.10-1 | ASTM D4977 | 08/25/10 |
| | F31960.08.10-2-R1 | ASTM D4977 | 03/25/13 |
| | F35400.05.11 | ASTM Physical Properties | 05/31/11 |
| | F41070.08.12 | ASTM D6222 | 08/24/12 |
| | U41790.05.12-2-R2 | ASTM D6222 | 02/11/13 |
| Underwriters Laboratories | U41790.05.12-1-R1 | ASTM D6222 | 01/21/13 |
| | R9516 | UL 790 | 01/25/13 |
| PRI Construction Materials Technologies, LLC | FBP-018-02-01 | ASTM D 6163 | 09/07/04 |
| | FBP-011-02-01 | ASTM D 6164 | 09/02/04 |
| | FBP-008-02-01 | ASTM D 6222 | 09/10/04 |
| | FBP-009-02-01 | ASTM D 6222 | 08/31/04 |
| | FBP-010-02-01 | ASTM D 6164 | 09/04/04 |
| | FBP-014-02-01 | ASTM D 6164 | 09/02/04 |
| | FBP-015-02-01 | ASTM D 6509 | 09/02/04 |
| | FBP-016-02-01 | ASTM D 6509 | 09/02/04 |
| | FBP-017-02-01 | ASTM D 6163 | 09/13/04 |

| <u>Test Agency</u> | <u>Test Identifier</u> | <u>Description</u> | <u>Date</u> |
|-------------------------------------------------|------------------------|--------------------|-------------|
| PRI Construction Materials Technologies, LLC | FBP-019-02-01 | ASTM D 4601 | 09/14/04 |
| | FBP-023-02-01 | ASTM D 6223 | 09/01/04 |
| | FBP-007-02-01 | ASTM D 6222 | 09/14/04 |
| | FBP-020-02-01 | ASTM D 2178 | 09/14/04 |
| | FBP-038-02-03 | ASTM D 6164 | 01/12/11 |
| | FBP-038-02-04 | ASTM D 6164 | 01/12/11 |
| | FBP-038-02-02 | ASTM D 6164 | 01/12/11 |
| | FBP-038-02-01 | ASTM D 6164 | 12/27/10 |
| | FBP-043-02-03 | ASTM D 6164 | 07/26/11 |
| | FBP-043-02-02 | ASTM D 6164 | 08/02/11 |
| | FBP-043-02-04 | ASTM D 6164 | 07/26/11 |
| | FBP-043-02-01 | ASTM D 6164 | 08/02/11 |
| | FBP-042-02-01 | ASTM D 6164 | 07/26/11 |
| | FBP-042-02-02 | ASTM D 6164 | 07/27/11 |
| | FBP-058-02-01 | ASTM D 4601 | 12/12/08 |
| | FBP-057-02-01 | ASTM D 2178 | 12/12/08 |
| | FBP-056-02-01 | ASTM D 2178 | 12/12/08 |
| | FBP-059-02-01 | ASTM D 1876 | 07/20/12 |
| | FBP-087-02-01 | ASTM D 4798 | 03/22/13 |
| | FBP-088-02-01 | ASTM D 4798 | 03/22/13 |

APPROVED ASSEMBLIES

Membrane Type: APP

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type B(1): Base layer of insulation mechanically attached, top layer adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|--------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------|
| ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL, RESISTA, Multi-Max-3 Minimum 1.3" thick | 1, 2, 6, 8, 10 or 13 | 1:2.4 ft ² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

| Top Insulation Layer (Optional) | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|-----------------------------------------------------------|-----------------------------------|-------------------------------------|
| Approved Perlite Minimum ¾" thick | N/A | N/A |
| Approved High Density Wood Fiberboard Minimum ½" thick | N/A | N/A |

Note: Optional top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

| | |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Base Sheet: | One ply of Firestone MB Base adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. |
| Ply Sheet: | (Optional) One or more plies of Firestone MB Base, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied. |
| Membrane: | One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12". |
| Surfacing: | (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following: <ol style="list-style-type: none">Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..Karnak No. 97, No. 97 AF or No. 169, Henry 520 aluminum, MB aluminum coating or APOC #212 at an application rate of 1½ gal./sq. |

Maximum Design Pressure: -45 psf (See General Limitation #9)



Membrane Type: SBS
Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel
System Type B(2): Base layer of insulation mechanically fastened, top layer adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|------------------------------|-------------------------------------------|--------------------------------------------|
| ACFoam-II | | |
| Minimum 1.3" thick | 6, 10 or 13 | 1:2 ft² |
| Multi-Max-3 | | |
| Minimum 1.3" thick | 1, 2, 6, 8, 10 or 13 | 1:2.4 ft² |
| ISO 95+ GL or RESISTA | | |
| Minimum 1.4" thick | 6, 10 or 13 | 1:2 ft² |
| Multi Max FA-3 | | |
| Minimum 1.5" thick | 6, 10 or 13 | 1:2 ft² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|----------------------------------------------|-------------------------------------------|--------------------------------------------|
| Approved Perlite | | |
| Minimum ¾" thick | N/A | N/A |
| Approved High Density Wood Fiberboard | | |
| Minimum ½" thick | N/A | N/A |

Note: Apply top layer of insulation in a full mopping of any approved mopping hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as Base Layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet: One ply of Firestone MB Base, Firestone SBS Base Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of SBS Smooth, SBS Base or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite,, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base, SBS Smooth) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing:

(Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design
Pressure:

-45 psf (See General Limitation #9)

Membrane Type: SBS
Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel
System Type B(3): Base layer of insulation mechanically fastened, top layer adhered with approved adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL or RESISTA | | |
| Minimum 1.5" thick | 1 with 17 | 1:2 ft² |
| Minimum 2" thick | 1 or 2 with 17 | 1:2 ft² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-----------------------------|-------------------------------------------|--------------------------------------------|
| DensDeck Prime | | |
| Minimum ¼" thick | N/A | N/A |

Note: Top layer of insulation shall be adhered with I.S.O. Twin Pack Insulation Adhesive applied in ½ - ¾" wide ribbons spaced 12 in. o.c. or I.S.O. FIX II or I.S.O. Stick applied in ¾" – 1" wide ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of Firestone SBS Base, SBS PolyBase, SBS Premium Base or SBS Smooth fully adhered to the insulation with Multi-Purpose MB Cold Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/sq. The minimum 3 in. wide side laps are sealed with Multi-Purpose MB Cold Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Ply Sheet: (Optional) One ply of Firestone SBS Base, SBS PolyBase, SBS Premium Base or SBS Smooth fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive squeegee applied at 1.5 – 2.0 gal/sq. The minimum 3 in. wide side laps are sealed with Multi-Purpose MB Cold Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite or SBS Smooth fully adhered with Multi-Purpose MB Cold Adhesive squeegee applied at 1.5 – 2.0 gal/sq. The minimum 3 in. wide side laps are sealed with Multi-Purpose MB Cold Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered with Multi-Purpose MB Cold Adhesive squeegee applied at 1.5 – 2.0 gal/sq. The minimum 4 in. wide side laps are sealed with Multi-Purpose MB Cold Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof gravel at 400 lb/sq in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive at 2.5 gal/sq (SBS roof covers)

Maximum Design Pressure: -45 psf (See General Limitation #9)

Membrane Type: SBS
Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel
System Type B(4): Base layer of insulation mechanically fastened, top layer adhered with approved adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL or RESISTA | | |
| Minimum 1.5" thick | 1 or 2 with 17 | 1:2.7 ft² |
| Minimum 2" thick | 1 or 2 with 17 | 1:4 ft² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

| Top Insulation Layer (Optional) | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|----------------------------------------|-------------------------------------------|--------------------------------------------|
| DensDeck Prime | | |
| Minimum ¼" thick | N/A | N/A |
| ISOGARD HD | | |
| Minimum ½" thick | N/A | N/A |

Note: Top layer of insulation shall be adhered with LiquiGard Membrane Adhesive applied in continuous ¾" – 1" wide ribbons spaced at a maximum 12 in. o.c. or applied with I.S.O. Twin Pack Insulation Adhesive applied in ½ - ¾" wide ribbons spaced 12 in. o.c. or I.S.O. FIX II or I.S.O. Stick applied in ¾" – 1" wide ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Firestone Ply IV M, Ply VI (6) M, MB Base M, SBS Base, , SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with Multi-Purpose MB Cold Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq

Surfacing:

(Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt.

Maximum Design
Pressure:

-45 psf (See General Limitation #9)

| | |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Membrane Type: | SBS |
| Deck Type 2I: | Steel, Insulated |
| Deck Description: | 18-22 ga. steel |
| System Type B(5): | Base layer of insulation mechanically fastened, top layer of insulation adhered with approved adhesive. |
| Thermal Barrier: | Min. ½” thick DensDeck or Dens Deck Prime mechanically fastened to deck with Firestone All-Purpose or Heavy Duty Fasteners and Insulation Fastening Plates at a rate of 1 per 2 ft ² . |

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL or RESISTA Minimum 1.5” thick | N/A | N/A |
| Middle Insulation Layer (Optional) | Insulation Fasteners (Table 3) | Fastener Density/ft² |
| ISO 95+ GL or RESISTA Minimum 1.5” thick | N/A | N/A |
| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
| DensDeck Prime Minimum ¼” thick | N/A | N/A |
| FiberTop E, Approved High Density Wood Fiberboard Minimum ½” thick | N/A | N/A |

Note: Insulation shall be adhered to the deck with I.S.O. Twin Pack Insulation Adhesive applied in ½ - ¾” wide ribbons spaced 12 in. o.c. or with I.S.O. Stick or I.S.O. FIX II applied in ¾-1” ribbons spaced 12” o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment

System 1:

| | |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Base Sheet: | Two plies of Firestone Ply IV , Ply VI, Ply IV (4) M, or Ply VI (6) M felt or One ply of Firestone SBS Base, SBS Premium Base or SBS Smooth fully adhered in full mopping of approved asphalt within the EVT range and at a rate of 20-25 lbs./sq. |
| Ply Sheet: | (Optional with FiberTop E & HDWF) One ply of Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs./sq. |
| Membrane: | One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs./sq. |



OR

(Not with MB Base M) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered

OR

(Only when adhering to Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

System 2: (with Dens Deck Prime coverboard only):

Base Sheet: One ply of Firestone SBS Poly Torch Base or SBS Glass Torch Base sheet, torch adhered to DensDeck Prime

Membrane: One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the base sheet with the 3” sidelaps heat fused with a torch.

Surfacing: (Optional) Install one of the following to obtain required fire classification.
1. Roof Gravel in Multi-Purpose MB Cold Adhesive.
2. Roof Gravel in a flood coat of approved asphalt

Maximum Design Pressure: -45 psf (See General Limitation #9)

Membrane Type: APP
Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel
System Type B(6): Base layer of insulation mechanically attached, top layer adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL, RESISTA or any Approved Polyisocyanurate listed in Table 2 | | |
| Minimum 1.5" thick | 1 or 2 | 1:2 ft² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|----------------------------------------------|-------------------------------------------|--------------------------------------------|
| Approved Perlite | | |
| Minimum ¾" thick | N/A | N/A |
| Approved High Density Wood Fiberboard | | |
| Minimum ½" thick | N/A | N/A |

Note: Top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Ply Sheet: One or more plies in any combination of the following: Firestone MB Base, Firestone Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet bonded to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs/sq. or one ply Firestone APP 160-P torch applied.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF or No. 169 at an application rate of 1½ gal./sq..

Maximum Design Pressure: -52.5 psf (See General Limitation #7)



Membrane Type: SBS
Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel
System Type B(7): Base layer of insulation mechanically fastened, top layer adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL, RESISTA or any Approved Polyisocyanurate listed in Table 2 | | |
| Minimum 1.5" thick | 1 or 2 | 1:2 ft² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|----------------------------------------------|-------------------------------------------|--------------------------------------------|
| Approved Perlite | | |
| Minimum ¾" thick | N/A | N/A |
| Approved High Density Wood Fiberboard | | |
| Minimum ½" thick | N/A | N/A |

Note: Top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One or more plies in any combination of the following: Firestone MB Base, SBS Base, , Firestone Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet bonded to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base,) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design
Pressure:

-52.5 psf (See General Limitation #7)

Membrane Type: APP
Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga., steel
System Type B(8): Base layer of insulation mechanically attached, top layer adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL, RESISTA or any Approved Polyisocyanurate listed in Table 2 | | |
| Minimum 1.5" thick | 1 or 2 | 1:2 ft² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|----------------------------------------------|-------------------------------------------|--------------------------------------------|
| Approved Perlite | | |
| Minimum ¾" thick | N/A | N/A |
| Approved High Density Wood Fiberboard | | |
| Minimum ½" thick | N/A | N/A |

Note: Top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Ply Sheet: One or more plies in any combination of the following: Firestone MB Base, Firestone Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet bonded to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs/sq. or one ply Firestone APP 160-P torch applied.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF or No. 169 at an application rate of 1½ gal./sq..

Maximum Design Pressure: -60 psf (See General Limitation #7)



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga.. steel

System Type B(9): Base layer of insulation mechanically fastened, top layer adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL, RESISTA or any Approved Polyisocyanurate listed in Table 2 | | |
| Minimum 1.5" thick | 1 or 2 | 1:2 ft² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|----------------------------------------------|-------------------------------------------|--------------------------------------------|
| Approved Perlite | | |
| Minimum ¾" thick | N/A | N/A |
| Approved High Density Wood Fiberboard | | |
| Minimum ½" thick | N/A | N/A |

Note: Top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One or more plies in any combination of the following: Firestone MB Base, SBS Base, , Firestone Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet bonded to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base,) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design
Pressure:

-60 psf (See General Limitation #7)

Membrane Type: APP
Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga., steel

System Type B(10): Base layer of insulation mechanically attached, top layer adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL, RESISTA or any Approved Polyisocyanurate listed in Table 2 | | |
| Minimum 1.5" thick | 1 or 2 | 1:1.6 ft² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|----------------------------------------------|-------------------------------------------|--------------------------------------------|
| Approved Perlite | | |
| Minimum ¾" thick | N/A | N/A |
| Approved High Density Wood Fiberboard | | |
| Minimum ½" thick | N/A | N/A |

Note: Top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Ply Sheet: Two or more plies in any combination of the following: Firestone MB Base, Firestone Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet bonded to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs/sq. or Firestone APP 160-P torch applied.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF or No. 169 at an application rate of 1½ gal./sq..

Maximum Design Pressure: -75 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga.. steel

System Type B(11): Base layer of insulation mechanically fastened, top layer adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL, RESISTA or any Approved Polyisocyanurate listed in Table 2 | | |
| Minimum 1.5" thick | 1 or 2 | 1:1.6 ft² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|----------------------------------------------|-------------------------------------------|--------------------------------------------|
| Approved Perlite | | |
| Minimum ¾" thick | N/A | N/A |
| Approved High Density Wood Fiberboard | | |
| Minimum ½" thick | N/A | N/A |

Note: Top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: Two or more plies in any combination of the following: Firestone MB Base, SBS Base, , Firestone Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet bonded to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base,) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design
Pressure:

-75 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., steel

System Type B(12): Base layer of insulation mechanically fastened, top layer of insulation adhered with approved adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL or RESISTA | | |
| Minimum 1.5" thick | 1 or 2 with 17 | 1:1.6 ft² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL or RESISTA | | |
| Minimum 1.5" thick | N/A | N/A |

Note: Top layer of insulation shall be adhered with I.S.O. Twin Pack Insulation Adhesive applied in ½ - ¾" wide ribbons spaced 12 in. o.c. or I.S.O. FIX II or I.S.O. Stick applied in ¾" – 1" wide ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Firestone Ply IV (4) M, Ply VI M, MB Base M, SBS Base, , SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt.

Maximum Design
Pressure:

-75 psf (See General Limitation #7)

Membrane Type: APP

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(1): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ACFoam-II, Minimum 1.3" thick | N/A | N/A |
| ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL or RESISTA Minimum 1.4" thick | N/A | N/A |
| Multi-Max-3 Minimum 1.5" thick | N/A | N/A |
| Approved Perlite Minimum ¾" thick | N/A | N/A |

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|----------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL, RESISTA, Multi-Max-3 Minimum 1.3" thick | 1, 2, 6, 8, 10 or 13 | 1:2.4 ft ² |
| Approved Perlite Minimum ¾" thick | 6, 10 or 13 | 1:3 ft ² |
| Approved High Density Wood Fiberboard Minimum ½" thick | 6, 10 or 13 | 1:2 ft ² |

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Firestone MB Base adhered to the insulation with approved asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.



Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF or No. 169, or APOC #212 at an application rate of 1½ gal./sq.

Maximum Design Pressure: -45 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(2): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ACFoam-II | | |
| Minimum 1.3" thick | N/A | N/A |
| ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL or RESISTA | | |
| Minimum 1.4" thick | N/A | N/A |
| Multi-Max-3 | | |
| Minimum 1.5" thick | N/A | N/A |
| Approved Perlite | | |
| Minimum ¾" thick | N/A | N/A |

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-----------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL, RESISTA, Multi-Max-3 | | |
| Minimum 1.3" thick | 1, 2, 6, 8, 10 or 13 | 1:2.4 ft ² |
| Approved Perlite | | |
| Minimum ¾" thick | 6, 10 or 13 | 1:3 ft ² |
| Approved High Density Wood Fiberboard | | |
| Minimum ½" thick | 6, 10 or 13 | 1:2 ft ² |

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Firestone MB Base, Firestone SBS Base, , Firestone Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of SBS Smooth, SBS Base, or Firestone Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base, , SBS Smooth) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq..

Maximum Design Pressure: -45 psf (See General Limitation #9)

Membrane Type: APP/SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(3): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|---------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL or RESISTA Minimum 1.5" thick | 1, 2, 6 (#14), 14 | 1:2 ft ² |

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of Firestone SBS Base, , SBS PolyBase, SBS Premium Base, APP 80 Glass Base or APP 80 Glass Base-P fully adhered to the insulation with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

Membrane: One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

(Not with APP 80 Glass Base or APP 80 Glass Base-P) One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, torch adhered to the base sheet

OR

(Not with APP 80 Glass Base or APP 80 Glass Base-P) One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

(Not with APP 80 Glass Base, APP 80 Glass Base-P) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

(Not with APP 80 Glass Base or APP 80 Glass Base-P) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

(Not with APP 80 Glass Base or APP 80 Glass Base-P) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing:

(Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design

Pressure:

-45 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., grade 33 steel

System Type C(4): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|-------------------------------------------------|-----------------------------------|-------------------------------------|
| Any approved polyisocyanurate listed in Table 2 | | |
| Minimum 1.5" thick | N/A | N/A |

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|----------------------------------|-----------------------------------|-------------------------------------|
| SECUROCK Gypsum-Fiber Roof Board | | |
| Minimum ¼" thick | 1 | 1:4 ft ² |

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Primer: (Optional) SECUROCK Gypsum-Fiber Roof Board may be primed with ASTM D41 asphalt primer and allowed to dry prior to application of base sheet

Base Sheet: One or more plies of Firestone SBS Glass Torch Base torch applied.

Membrane: One ply of Firestone SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch applied.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design Pressure: -45 psf (See General Limitation #9)



Membrane Type: SBS/APP

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(5): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-----------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL or RESISTA Minimum 2.3" thick | 1 or 2 with 17 | 1:2 ft² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Base Sheet: One ply of Firestone SBS Base, , SBS PolyBase, SBS Premium Base or SBS Smooth fully adhered to the insulation with Multi-Purpose MB Cold Adhesive squeegee applied at 1½ - 2 gal/sq.

Ply Sheet: One ply of Firestone SBS Base, , SBS PolyBase, SBS Premium Base or SBS Smooth fully adhered to the insulation with Multi-Purpose MB Cold Adhesive squeegee applied at 1½ - 2 gal/sq.

Membrane: One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium FR or SBS Premium FR UltraWhite fully adhered to ply sheet with Multi-Purpose MB Cold Adhesive squeegee applied at 1½ - 2 gal/sq.

OR

One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to ply sheet with Multi-Purpose MB Cold Adhesive squeegee applied at 1½ - 2 gal/sq.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof gravel in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive (SBS roof covers)

Maximum Design Pressure: -45 psf (See General Limitation #9)

Membrane Type: APP/SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(6): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL or RESISTA | | |
| Minimum 1.5" thick | N/A | N/A |

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-----------------------------|-------------------------------------------|--------------------------------------------|
| ISOGARD HD | | |
| Minimum ½" thick | 1 or 2 with 17 | 1:2.7 ft² |

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of Firestone MB Base M, SBS Base, , SBS PolyBase, SBS Premium Base fully adhered to the coverboard with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

Membrane: One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Premium, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium FR, SBS Premium FR UltraWhite, fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

(Not with MB Base M) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel in Multi-Purpose MB Cold Adhesive
2. Roof Gravel in a flood coat of approved asphalt

Maximum Design

Pressure: -45 psf (See General Limitation #9)

Membrane Type: APP

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(7): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-----------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL or RESISTA Minimum 1.5" thick | N/A | N/A |

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--------------------------------------------|-------------------------------------------|--------------------------------------------|
| DensDeck Prime Minimum ¼" thick | 1 or 2 with 17 | 1:4 ft² |

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply Firestone APP 160-P torch applied.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, torch applied

Surfacing: (Optional) Install one of the following to obtain required fire classification.
1. Roof gravel at 400 lb/sq in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive at 2.5 gal/sq

**Maximum Design
Pressure:** -45 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(8): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-----------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL or RESISTA Minimum 1.5" thick | N/A | N/A |

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--------------------------------------------|-------------------------------------------|--------------------------------------------|
| DensDeck Prime Minimum ¼" thick | 1 or 2 with 17 | 1:4 ft² |

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Firestone SBS Poly Torch Base sheet is torch adhered to the coverboard.

Membrane: One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the base sheet with the 3" sidelaps heat fused with a torch.
OR
One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Surfacing: (Optional) Install one of the following to obtain required fire classification.
1. Roof gravel at 400 lb/sq in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive at 2.5 gal/sq

Maximum Design Pressure: –45 psf (See General Limitation #9)



Membrane Type: APP/SBS
Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel
System Type C(9): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|---------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL or RESISTA Minimum 2" thick | 1 or 2 | 1:1.33 ft² |

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of Firestone SBS Base, SBS PolyBase, SBS Smooth, SBS Premium Base, APP 80 Glass Base or APP 80 Glass Base-P fully adhered to the insulation with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

Membrane: (Not with SBS Smooth) One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

(Not with SBS Smooth, APP 80 Glass Base or APP 80 Glass Base-P) One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, torch adhered to the base sheet or one ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS Torch FR, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

(Not with APP 80 Glass Base or APP 80 Glass Base-P) One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

(Not with APP 80 Glass Base or APP 80 Glass Base-P) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

(Not with APP 80 Glass Base or APP 80 Glass Base-P) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design
Pressure:

-52.5 psf (See General Limitation #7)



Membrane Type: APP/SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(10): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|---------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL or RESISTA Minimum 2.3" thick | 1 or 2 with 17 | 1:1.33 ft ² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Base Sheet: One or more plies Firestone SBS Base, , SBS PolyBase, SBS Premium Base or SBS Smooth fully adhered to the insulation with Multi-Purpose MB Cold Adhesive squeegee applied at 1½ - 2 gal/sq.

Ply Sheet: One or more plies Firestone SBS Base, , SBS PolyBase, SBS Premium Base or SBS Smooth fully adhered to the insulation with Multi-Purpose MB Cold Adhesive squeegee applied at 1½ - 2 gal/sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite fully adhered to ply sheet with Multi-Purpose MB Cold Adhesive squeegee applied at 1½ - 2 gal/sq.

OR

One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to ply sheet with Multi-Purpose MB Cold Adhesive squeegee applied at 1½ - 2 gal/sq.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof gravel in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive (SBS roof covers)

Maximum Design Pressure: -52.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(11): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| Any approved polyisocyanurate listed in Table 2 Minimum 1.5" thick | N/A | N/A |

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| SECUROCK Gypsum-Fiber Roof Board Minimum ½" thick | 18 | 1:1.78 ft² |

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Note: (Optional) SECUROCK Gypsum-Fiber Roof Board may be primed with ASTM D41 asphalt primer and allowed to dry prior to application of base sheet.

Primer: (Optional) SECUROCK Gypsum-Fiber Roof Board may be primed with ASTM D41 asphalt primer and allowed to dry prior to application of base sheet

Base Sheet: One or more plies of Firestone SBS Poly Torch Base or SBS Glass Torch Base torch applied.

Membrane: One ply of Firestone SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch applied.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

**Maximum Design
Pressure:** -75 psf (See General Limitation #7)



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., steel

System Type C(12): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|-----------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL or RESISTA | | |
| Minimum 1.5" thick | 1 or 2 with 17 | 1:1.8 ft ² |
| Minimum 1.5" thick | 1 or 2 with 17 | 1:1 ft ² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Base Sheet: One ply of Firestone Ply IV (4) M, Ply VI (6) M, MB Base M, SBS Base, , SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Membrane: Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt

Maximum Design Pressure: -60 psf; 1.5"thick – at a fastener density of 1:1.8 ft² (See General Limitation #7)
-97.5 psf; 1.5"thick – at a fastener density of 1:1 ft² (See General Limitation #7)

Membrane Type: SBS
Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga., steel
System Type C(13): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|---------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL or RESISTA Minimum 1.5" thick | 1 or 2 with 17 | 1:1.3 ft ² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Base Sheet: One ply of Firestone Ply IV (4) M, Ply VI (6) M, MB Base M, SBS Base, , SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.
OR
(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.
OR
(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.
OR
(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification.
1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt

Maximum Design Pressure: -90 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(14): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL or RESISTA | | |
| Minimum 1.5" thick | N/A | N/A |

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-----------------------------|-------------------------------------------|--------------------------------------------|
| DensDeck Prime | | |
| Minimum ½" thick | 1 or 2 | See Below |

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of Firestone SBS Poly Torch Base or SBS Glass Torch Base sheet is torch adhered to the coverboard.

Membrane: One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the base sheet with the 3" sidelaps heat fused with a torch.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design

Pressure: -97.5 psf at a fastener density of 1:1.33 ft² (See General Limitation #7)
-127.5 psf at a fastener density of 1:1 ft² (See General Limitation #7)



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., steel

System Type C(15): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|-------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL or RESISTA Minimum 2" thick | 1 or 2 with 17 | 1:1.6 ft ² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Base Sheet: One ply of Firestone Ply IV (4) M, Ply VI (6) M, MB Base M, SBS Base, , SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Ply Sheet: (Optional) One ply of Firestone Ply IV (4) M, Ply VI (6) M, MB Base M, SBS Base, , SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt

Maximum Design

Pressure: -82.5 psf (See General Limitation #7)



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(16): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|---------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL or RESISTA Minimum 2.2" thick | N/A | N/A |

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|------------------------------------|-----------------------------------|-------------------------------------|
| DensDeck Prime Minimum ½" thick | 14 | See Below |

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

System 1:

Base Sheet: One ply of Firestone SBS Base, , SBS Premium Base or MB Base M fully adhered to the coverboard with hot asphalt applied at a rate of 20-25 lb/sq.

Ply Sheet: One or more plies of Firestone Ply IV (4) M or Ply VI (6) M Ply Felt, SBS Smooth, SBS Base or fully adhered with hot asphalt applied at a rate of 20-25 lb/sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS Smooth, SBS Premium, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered with hot asphalt at a rate of 20-25 lb/sq.

OR

(Not with MB Base M) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.



OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered

OR

(Only when adhering to Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

System 2:

Base Sheet: Two or three of Firestone Ply IV (4) M or Ply VI (6) M Ply Felt fully adhered to the coverboard with hot asphalt applied to each ply at a rate of 20-25 lb/sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS Smooth, SBS Premium, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered with hot asphalt at a rate of 20-25 lb/sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design

Pressure: -112.5 psf at a fastener density of 1:1.33 ft² (See General Limitation #7)
-157.5 psf at a fastener density of 1:1 ft² (See General Limitation #7)



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. , grade 33 steel

System Type C(17): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|-------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL or RESISTA Minimum 2" thick | 1 or 2 with 17 | 1:1 ft ² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Base Sheet: One ply of Firestone Ply IV (4) M, Ply VI (6) M, MB Base M, SBS Base, , SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Ply Sheet: (Optional) One ply of Firestone Ply IV (4) M, Ply VI (6) M, MB Base M, SBS Base, , SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt

Maximum Design
Pressure:

-112.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., grade 80 steel

System Type C(18): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|-------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL or RESISTA Minimum 2" thick | 1 or 2 with 17 | 1:1 ft ² |

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Base Sheet: One ply of Firestone Ply IV (4) M, Ply VI (6) M, MB Base M, SBS Base, , SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Ply Sheet: (Optional) One ply of Firestone Ply IV (4) M, Ply VI (6) M, MB Base M, SBS Base, , SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt

Maximum Design
Pressure:

-135 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(19): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-----------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL or RESISTA Minimum 2.2" thick | N/A | N/A |

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| SECUROCK Gypsum-Fiber Roof Board Minimum ½" thick | 14 | See Below |

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

System 1:

Base Sheet: One ply of Firestone SBS Base, , SBS Premium Base or MB Base M fully adhered to the coverboard with hot asphalt applied at a rate of 20-25 lb/sq.

Ply Sheet: One or more plies of Firestone Ply IV (4) M or Ply VI (6) M Ply Felt, SBS Smooth, SBS Base or fully adhered with hot asphalt applied at a rate of 20-25 lb/sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS Smooth, SBS Premium, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Premium FR or SBS Premium FR UltraWhite, cap sheet fully adhered with hot asphalt at a rate of 20-25 lb/sq.

OR

(Not with MB Base M) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.



OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered

OR

(Only when adhering to Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

System 2:

Base Sheet: Two or three plies of Firestone Ply IV (4) M or Ply VI (6) M Ply Felt fully adhered to the coverboard with hot asphalt applied to each ply at a rate of 20-25 lb/sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS Smooth, SBS Premium, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered with hot asphalt at a rate of 20-25 lb/sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design

Pressure: -157.5 psf at a fastener density of 1:1.33 ft² (See General Limitation #7)
-172.5 psf at a fastener density of 1:1 ft² (See General Limitation #7)



Membrane Type: APP

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type D(1): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ACFoam-II | | |
| Minimum 1.3" thick | N/A | N/A |
| ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL or RESISTA | | |
| Minimum 1.4" thick | N/A | N/A |
| Multi-Max-3 | | |
| Minimum 1.5" thick | N/A | N/A |
| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
| Approved Perlite | | |
| Minimum ¾" thick | N/A | N/A |
| Approved High Density Wood Fiberboard | | |
| Minimum ½" thick | N/A | N/A |

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone MB Base or MB Base M with a 4" side lap mechanically fastened through the insulation to the deck as described below:

Fastening: Approved Dekfast, Firestone, OMG, Tru-Fast, Roofgrip screws with metal plates at the side lap 18" o.c. and two rows staggered in the center of the sheet 36" o.c.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF or No. 169, or APOC #212 at an application rate of 1½ gal./sq.

Maximum Design Pressure: -45 psf (See General Limitation #9)



Membrane Type: SBS
Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel
System Type D(2): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ACFoam-II | | |
| Minimum 1.3" thick | N/A | N/A |
| ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL or RESISTA | | |
| Minimum 1.4" thick | N/A | N/A |
| Multi-Max-3 | | |
| Minimum 1.5" thick | N/A | N/A |
| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
| Approved Perlite | | |
| Minimum ¾" thick | N/A | N/A |
| Approved High Density Wood Fiberboard | | |
| Minimum ½" thick | N/A | N/A |

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone MB Base, SBS Base or with a 4" side lap mechanically fastened to the deck through the insulation as described below:

Fastening: Approved Dekfast, OMG or TruFast screws and metal or plastic plates, at a 4" side lap 18" o.c. and two rows staggered in the center of the sheet 36" o.c..

Ply Sheet: (Optional) One or more plies of SBS Smooth, SBS Base or or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base, , SBS Smooth) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing:

(Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq..

Maximum Design
Pressure:

–45 psf (See General Limitation #9)

Membrane Type: APP/SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type D(3): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|---------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL or RESISTA Minimum 1.5" thick | N/A | N/A |

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone MB Base M mechanically fastened to the deck through the insulation with Firestone All-Purpose or Heavy Duty Fasteners and Insulation Fastening Plates applied 12" o.c. through the 4" wide base sheet overlaps and 12" o.c. in 2 rows equally spaced and staggered in the field of the base sheet.

OR

One ply of Firestone SBS PolyBase mechanically fastened to the deck through the insulation with Firestone All-Purpose or Heavy Duty Fasteners and 2" Barbed Seam Metal Plates applied 12" o.c. through the 4" wide base sheet overlaps

Membrane: One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

OR

One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing:

(Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design
Pressure:

-45 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type D(4): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-----------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL or RESISTA Minimum 1.5" thick | N/A | N/A |

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone SBS Poly Torch Base Sheet mechanically fastened to the deck through the insulation as described below:

Fastening: Firestone All Purpose Fasteners and MB 2" Barbed Metal Seam Plates at a 4" side lap 18" o.c. The minimum 4" side laps are torch adhered.

Membrane: Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch applied to the base sheet.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

**Maximum Design
Pressure:** -45 psf (See General Limitation #9)



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: min. 22 ga., steel

System Type D(5): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|----------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL, RESISTA, AC Foam-II, ENRGY 3, Fesco Foam, ENRGY 3 25 PSI or Multi-Max FA-3 | | |
| Minimum 1.5" thick | N/A | N/A |

Note: Insulation shall have preliminary attachment, prior to the installation of the base sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone SBS Poly Torch Base sheet mechanically fastened to the deck through the insulation as described below:

Fastening: Firestone Heavy-Duty Plus fasteners spaced 12 in. o.c. along Firestone Coiled Metal Batten Bar centered within the 3 in. wide side laps spaced 36 in. o.c. The minimum 3" side laps are torch adhered.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.



OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof gravel at 400 lb/sq in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive at 2.5 gal/sq (SBS roof covers)

Maximum Design
Pressure: -67.5 psf (See General Limitation #7)



Membrane Type: APP

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type D(6): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|----------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL, RESISTA or any other Approved polyisocyanurate listed in Table 2 Minimum 1.5" thick | N/A | N/A |

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone MB Base or MB Base M with a 4" side lap mechanically fastened through the insulation to the deck with Firestone All-Purpose or Heavy Duty fasteners and plates at a spacing of 12" o.c. in the 4" side lap and two rows staggered in the center of the sheet, 12" o.c.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF or No. 169 at an application rate of 1½ gal./sq..

Maximum Design Pressure: -82.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type D(7): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL, RESISTA or any other Approved polyisocyanurate listed in Table 2 Minimum 1.5" thick | N/A | N/A |

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone MB Base or MB Base M with a 4" side lap mechanically fastened through the insulation to the deck with Firestone All-Purpose or Heavy Duty fasteners and plates at a spacing of 12" o.c. in the 4" side lap and two rows staggered in the center of the sheet, 12" o.c.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, SBS Base, , Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base or ply sheet hot mopped in Type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base,) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design
Pressure:

-82.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type D(8): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|---------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL or RESISTA Minimum 1.5" thick | N/A | N/A |

Note: Top layer shall have preliminary attachment, prior to the installation of the base sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone MB Base M with a 4" side lap mechanically fastened through the insulation to the deck with Firestone All-Purpose or Heavy Duty fasteners and Insulation Fastening Plates at a spacing of 12" o.c. within the 4" side lap and two staggered rows, equally spaced in the center of the sheet, 12" o.c.

Ply Sheet: One ply Firestone SBS Glass Torch Base torch applied to the base sheet with the 3" side laps are heat fused with a torch.

Membrane: Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch applied to the ply sheet. Minimum 3" side laps are heat fused with torch.

Surfacing: (Optional) Install one of the following to obtain required fire classification.
1. Roof gravel at 400 lb/sq in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive at 2.5 gal/sq

Maximum Design Pressure: -82.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., steel

System Type D(9): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|---------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL or RESISTA Minimum 1.5" thick | N/A | N/A |

Note: Top layer shall have preliminary attachment, prior to the installation of the base sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone SBS Poly Torch Base Sheet with a 4" side lap mechanically fastened through the insulation to the deck with Firestone All-Purpose or Heavy Duty fasteners and Insulation Fastening Plates at a spacing of 12" o.c. within the 4" side lap and two staggered rows, equally spaced in the center of the sheet, 12" o.c.

Ply Sheet: One ply Firestone SBS Poly Torch Base Sheet, torch applied to the base sheet with the 3" side laps are heat fused with a torch.

Membrane: One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof gravel at 400 lb/sq in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive at 2.5 gal/sq

Maximum Design Pressure: –82.5 psf (See General Limitation #7)



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 22 ga., steel

System Type D(10): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|----------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL, RESISTA, AC Foam-II, ENRGY 3, Fesco Foam, ENRGY 3 25 PSI or Multi-Max FA-3 | | |
| Minimum 1.5" thick | N/A | N/A |

Note: Insulation shall have preliminary attachment, prior to the installation of the base sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone SBS Poly Torch Base sheet mechanically fastened to the deck through the insulation as described below:

Fastening: Firestone Heavy-Duty Plus fasteners spaced 6 in. o.c. along Firestone Coiled Metal Batten Bar centered within the 4 in. wide side laps spaced 36 in. o.c. The minimum 4" side laps are torch adhered.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.



OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof gravel at 400 lb/sq in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive at 2.5 gal/sq (SBS roof covers)

Maximum Design

Pressure: -112.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: min. 22 ga. steel

System Type D(11): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft ² |
|----------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------|
| ISO 95+ GL, RESISTA, AC Foam-II, ENRGY 3, Fesco Foam, ENRGY 3 25 PSI or Multi-Max FA-3 | | |
| Minimum 1.5" thick | N/A | N/A |

Note: Insulation shall have preliminary attachment, prior to the installation of the base sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone SBS Poly Torch Base sheet mechanically fastened to the deck through the insulation as described below:

Fastening: Firestone Heavy-Duty Plus fasteners spaced 6 in. o.c. along Firestone Coiled Metal Batten Bar centered within the 4 in. wide side laps spaced 36 in. o.c. The minimum 4" side laps are torch adhered.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof gravel at 400 lb/sq in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive at 2.5 gal/sq (SBS roof covers)

Maximum Design
Pressure:

-127.5 psf (See General Limitation #7)



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type D(12): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|-----------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
| ISO 95+ GL, RESISTA or AC Foam-II Minimum 1.5" thick | N/A | N/A |
| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
| DensDeck or DensDeck Prime Minimum ½" thick | N/A | N/A |

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone SBS Poly Torch Base Sheet mechanically fastened to the deck through the insulation as described below:

Fastening: Firestone Heavy-Duty Plus fasteners spaced 6 in. o.c. along Firestone Coiled Metal Batten Bar centered within the 4 in. wide side laps spaced 36 in. o.c. The minimum 4" side laps are torch adhered.

Ply Sheet: (Optional) One ply Firestone SBS Poly Torch Base, SBS Glass Torch Base is torch applied to the base sheet.

Membrane: Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch applied to the base or ply sheet.

Surfacing: (Optional) Install one of the following to obtain required fire classification.
1. Roof gravel at 400 lb/sq in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive at 2.5 gal/sq

Maximum Design Pressure: -157.5 psf (See General Limitation #7)

STEEL DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117, calculations shall be signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant.
2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8" puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq.

Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.

5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9N-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE



NOA No.: 11-0119.10
Expiration Date: 03/08/16
Approval Date: 04/25/13
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